

# PRODUCT INFORMATION



## C18 Ganglioside G<sub>D3</sub>-d<sub>3</sub> (ammonium salt)

Item No. 24852

CAS Registry No.: 2692624-24-9

Formal Name: N-[(1S,2R,3E)-1-[[[O-(N-acetyl- $\alpha$ -neuraminosyl)-(2 $\rightarrow$ 8)-O-(N-acetyl- $\alpha$ -neuraminosyl)-(2 $\rightarrow$ 3)-O- $\beta$ -D-galactopyranosyl-(1 $\rightarrow$ 4)- $\beta$ -D-glucopyranosyl]oxy]methyl]-2-hydroxy-3-heptadecen-1-yl]-octadecanamide-18,18,18-d<sub>3</sub>, diammonium salt

Synonyms: Disialosyllactosylceramide-d<sub>3</sub>,  
N-omega-C<sub>D3</sub>-Octadecanoyl Disialoganglioside G<sub>D3</sub>-d<sub>3</sub>

MF: C<sub>70</sub>H<sub>122</sub>D<sub>3</sub>N<sub>3</sub>O<sub>29</sub>

FW: 1,509.8

Chemical Purity:  $\geq$ 98% (Ganglioside G<sub>D3</sub>)

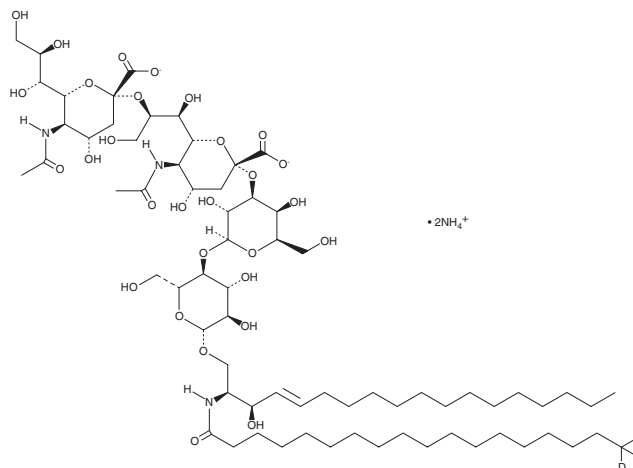
Deuterium

Incorporation:  $\geq$ 99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>);  $\leq$ 1% d<sub>0</sub>

Supplied as: A solid

Storage: -20°C

Stability:  $\geq$ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

C18 Ganglioside G<sub>D3</sub>-d<sub>3</sub> (ammonium salt) is intended for use as an internal standard for the quantification of ganglioside G<sub>D3</sub> (Item No. 17481) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

C18 Ganglioside G<sub>D3</sub>-d<sub>3</sub> (ammonium salt) is supplied as a solid. A stock solution may be made by dissolving the C18 ganglioside G<sub>D3</sub>-d<sub>3</sub> (ammonium salt) in the solvent of choice. C18 Ganglioside G<sub>D3</sub>-d<sub>3</sub> (ammonium salt) is soluble in a 2:1:0.1 solution of chloroform:methanol:water.

### Description

Ganglioside G<sub>D3</sub> is synthesized by the addition of two sialic acid residues to lactosylceramide (Item No. 16983) and can serve as a precursor to the formation of more complex gangliosides by the action of glycosyl- and sialyltransferases. With roles in cell proliferation and differentiation, its expression increases during development and in pathological conditions such as cancer.<sup>1</sup> Furthermore, the intracellular accumulation of ganglioside G<sub>D3</sub> can contribute to mitochondrial damage, a crucial event during apoptosis.<sup>2</sup> Ganglioside G<sub>D3</sub> has become a target for therapeutic approaches to prevent malignant properties of tumor cells like melanoma.<sup>1,3</sup> As this product is derived from a natural source, there may also be variations in the sphingoid backbone.

### References

1. Hamamura, K., Furukawa, K., Hayashi, T., *et al.* Ganglioside G<sub>D3</sub> promotes cell growth and invasion through p130Cas and paxillin in malignant melanoma cells. *Proc. Natl. Acad. Sci. USA* **102**(31), 11041-11046 (2005).
2. De Maria, R., Lenti, L., Malisan, F., *et al.* Requirement for G<sub>D3</sub> ganglioside in CD95- and ceramide-induced apoptosis. *Science* **277**(5332), 1652-1655 (1997).
3. Nicoll, G., Avril, T., Lock, K., *et al.* Ganglioside G<sub>D3</sub> expression on target cells can modulate NK cell cytotoxicity via siglec-7-dependent and -independent mechanisms. *Eur. J. Immunol.* **33**(6), 1642-1648 (2003).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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